ABSTRACT

A bandwidth allocation device and a dynamic bandwidth allocation method are provided for differentiated classes of service in an Ethernet Passive Optical Network (EPON), which includes an optical line termination (OLT), an optical distribution network (ODN), and a plurality of optical network units (ONUs). The OLT includes a Multi-Point Control Protocol (MPCP) allocator, which includes a class-based queue state counter and a grant generator. The ONU includes an MPCP requester, which includes a class-based buffer counter and a request generator. The device and the method enable efficient utilization of network resources using class-based grant allocation.